

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Canceled).

Claim 2 (Previously Presented): A thermally-assisted magnetic recording head capable of recording information magnetically on a recording medium, comprising:

a laser device configured to emit a light to heat the recording medium to reduce magnetic coercive force thereof;

a light absorbing film provided between the laser device and the recording medium, the light absorbing film having an aperture through which the light is applied to the recording medium; and

a magnetic pole configured to record the information magnetically on the recording medium by applying recording magnetic field to the recording medium having the reduced coercive force,

the aperture being adapted so that a polarizing direction of the light emitted from the laser device is approximately perpendicular to a direction along a longitudinal extension of recording tracks formed on the recording medium,

a width W1 of the aperture taken along the polarizing direction being smaller than a width W2 of the aperture taken approximately perpendicular to the polarizing direction, and

the width W1 being shorter than 1/2 of a wavelength at the center of a spectrum of the light emitted from the laser device.

Claim 3 (Previously Presented): The thermally-assisted magnetic head according to claim 2, further comprising a dielectric film provided between the laser device and the light absorbing film.

Claim 4 (Original): The thermally-assisted magnetic head according to claim 3, wherein an optical film thickness of the dielectric film is in a range from 0.05λ to 0.35λ relative to the wavelength λ of the light emitted from the laser device.

Claim 5 (Previously Presented): The thermally-assisted magnetic recording head according to claim 2, wherein the width $W1$ is within a range in which an absorption loss through the aperture of light having an electric field vector perpendicular to the direction of the aperture width $W1$ is 10 times as much as an absorption loss through the aperture of light having a magnetic field vector perpendicular to the direction of the aperture width $W1$, or even higher.

Claim 6 (Previously Presented): The thermally-assisted magnetic recording head according to claim 2, wherein the laser device is a semiconductor laser device of which laser oscillation mode is a TM mode.

Claim 7 (Previously Presented): The thermally-assisted magnetic recording head according to claim 2, further comprising an optical light collector which converges the light emitted from the laser device to direct it into the aperture.

Claim 8 (Previously Presented): The thermally-assisted magnetic recording head according to claim 2, wherein the aperture is filled with dielectric or semiconductor material.

Claims 9-16 (Canceled).

Claim 17 (Withdrawn): A method of manufacturing a thermally-assisted magnetic recording head including a heating device configured to irradiate the recording medium with a heat beam to reduce magnetic coercive force of the recording medium, and a magnetic pole configured to apply recording magnetic field to the recording medium having the reduced coercive force to record information thereon magnetically, comprising the steps of

connecting a first substrate onto a second substrate, the heating device being to be formed in the first substrate while the magnetic pole is to be formed in the second substrate, fabricating the heating device on the first substrate, applying a material transparent to light in a path in the heating device, the heat beam being emitted through the path, and

fabricating the magnetic pole on the second substrate above the heating device, above the material transparent to light, and around them,

the material transparent to light having a distribution uneven thickness so that a tip of the magnetic pole protrudes between the heating device and the recording medium.

Claim 18 (Withdrawn): A method of manufacturing a thermally-assisted magnetic recording head including a heating device configured to irradiate a recording medium with a heat beam to reduce magnetic coercive force of the recording medium, and

a magnetic pole configured to apply recording magnetic field to the recording medium having the reduced coercive force to record information thereon magnetically, comprising the steps of

fabricating the heating device on a first substrate,

connecting the first substrate onto a second substrate, the heating device having been prefabricated in the first substrate while the magnetic pole is to be formed in the second substrate,

applying a material transparent to light in a path in the heating device, the material transparent to light being over either the first substrate or the second substrate, and the heat beam being emitted through the path, and

fabricating the magnetic pole on the second substrate above the heating device, above the material transparent to light, and around them,

the material transparent to light having a distribution uneven thickness so that a tip of the magnetic pole protrudes between the heating device and the recording medium.

Claim 19 (Withdrawn): A method of manufacturing a thermally-assisted magnetic recording head including a heating device configured to irradiate a recording medium with a heat beam to reduce magnetic coercive force of the recording medium, and

a magnetic pole configured to apply recording magnetic field to the recording medium having the reduced coercive force to record information thereon magnetically, comprising the steps of

fabricating the heating device on a first substrate,

fabricating the magnetic pole on a second substrate, with its tip being directed upward, and

connecting the heating device and the magnetic pole with the first substrate and the second substrate being opposed to each other, so that the tip of the magnetic pole protrudes between the heating device and the recording medium.

Claim 20 (Previously Presented): The thermally-assisted magnetic head according to claim 2, wherein the aperture has a rectangular shape.

Claim 21 (Previously Presented): A thermally-assisted magnetic recording apparatus capable of recording information magnetically on a recording medium, comprising:

a thermally-assisted magnetic recording head; and

an actuating mechanism configured to move the recording medium and the magnetic recording head relative to each other,

wherein the thermally-assisted magnetic recording head includes:

a laser device configured to emit a light to heat the recording medium to reduce magnetic coercive force thereof;

a light absorbing film provided between the laser device and the recording medium, the light absorbing film having an aperture through which the light is applied to the recording medium; and

a magnetic pole configured to record the information magnetically on the recording medium by applying recording magnetic field to the recording medium having the reduced coercive force,

the aperture being adapted so that a polarizing direction of the light emitted from the laser device is approximately perpendicular to a direction along a longitudinal extension of recording tracks formed on the recording medium,

a width of the aperture taken along the polarizing direction being smaller than a width of the aperture taken approximately perpendicular to the polarizing direction, and the width W1 being shorter than $1/2$ of a wavelength at the center of a spectrum of the light emitted from the laser device.

Claim 22 (Previously Presented): The thermally-assisted magnetic apparatus according to claim 21, further comprising a recording medium,

the recording medium including a record layer in which magnetic information is recorded, and an antireflection layer made of dielectric or semiconductor material deposited over the record layer.

Claim 23 (New): The thermally-assisted magnetic recording head according to claim 2, wherein the light absorbing film has a flattened surface.

Claim 24 (New): The thermally-assisted magnetic apparatus according to claim 21, wherein the light absorbing film has a flattened surface.